

**Bonneville Power AdministrationPower Administration
Fish and Wildlife Program FY98 Proposal Form**

Section 1. General administrative information

Title of project.

Irrigation Diversion Consolidations & Water Conservation; Upper Salmon River, Idaho

Bonneville project number, if an ongoing project 9600700

Business name of agency, institution or organization requesting funding

Custer County Soil & Water Conservation District

Business acronym (if appropriate) CS&WCD

Proposal contact person or principal investigator:

Name Lida Robinson, Chair

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Subcontractors.

Organization	Mailing Address	City, ST Zip	Contact Name
Idaho Department of Fish & Game	P.O. Box 1336	Salmon, Idaho 83467	Pat Marcuson

NPPC Program Measure Number(s) which this project addresses.

7.7, 7.8G, 7.8H, & 7.10

NMFS Biological Opinion Number(s) which this project addresses.

NMFS letter dated January 10, 1996 concurring with Bureau of Reclamation Biological Assessment of Task I would not adversely affect listed or proposed species or their critical habitat. NMFS currently reviewing Biological Assessment of Task II.

Other planning document references.

Task supported by Sho-Ban Tribe, Idaho Department of Fish & Game, National Marine Fisheries Service, U.S. Fish & Wildlife Service, Lemhi-Pahsimeroi-East Fork Model Watershed Program, and participating local irrigation companies and private landowners.

Subbasin.

Salmon River

Short description.

Complete irrigation consolidation of three (3) gravity diversions and one (1) pump diversion into a single diversion. Conversion from gravity irrigation to sprinkler irrigation which will enhance Salmon River instream flows and fish passage. Construct fish screen to NMFS criteria.

Section 2. Key words

Mark	Programmatic Categories	Mark	Activities	Mark	Project Types
X	Anadromous fish	X	Construction	X	Watershed
+	Resident fish		O & M		Biodiversity/genetics
	Wildlife		Production		Population dynamics
	Oceans/estuaries		Research		Ecosystems
	Climate		Monitoring/eval.	+	Flow/survival
	Other		Resource mgmt		Fish disease
			Planning/admin.		Supplementation
			Enforcement		Wildlife habitat en-
			Acquisitions		hancement/restoration

Other keywords.

Enhance instream flow, reduce juvenile entrainment, water conservation, enhance juvenile & adult passage

Section 3. Relationships to other Bonneville projects

Project #	Project title/description	Nature of relationship
9401500	Idaho Fish Screening Program	Augments IDF&G existing fish screening program
9306200	Salmon River Anadromous Fish Passage Enhancement, Idaho	Augments Model Watershed fish passage program
9401700	Idaho Model Watershed Habitat Projects	Augments efforts of the Model Watershed Habitat program by consolidating irrigation diversions and removing artificial instream structures (diversion berms)

Section 4. Objectives, tasks and schedules

Obj 1,2, 3	Objective	Task a,b,c	Task
1	Irrigation diversion elimination/consolidation	a	Gini Canal enlargement
		b	Close off and abandon Lavery (S-29), Hammond/Leaton (S-26) ditches, and Chester inriver pump
2	Enhance instream flow of Salmon River	a	Installation of sprinklers
3	Reduce juvenile entrainment	a	Construct fish screen on Gini Canal to NMFS criteria

Objective schedules and costs

Objective #	Start Date mm/yyyy	End Date mm/yyyy	Cost %
1	02/1998	06/1998	10
2	06/1998	06/1999	23
3	06/1998	06/1999	67

Schedule constraints.

Funding must be available to coincide with the non-irrigation season. Canal and in-river construction is only possible from November 1st to mid-December and late February to April 15th.

Completion date.

2002

Section 5. Budget

Item	Note	FY98
Personnel	IDFG engineering, design, survey & inspection of fish screen @ \$46,000; NRCS construction inspection of canal enlargement, headgate/trash rack, &	\$81,000

	bifurcation. Design review and construction inspection of sprinkler system installations @ \$35,000.	
Fringe benefits	Included with Personnel above	
Supplies, materials, non-expendable property	Screen fabrication labor & materials @ \$118,500	\$118,500
Operations & maintenance		
Capital acquisitions or improvements (e.g. land, buildings, major equip.)		
PIT tags	# of tags:	
Travel		
Indirect costs	CS&WCD administration (5%) @ \$36,480	\$36,480
Subcontracts	Screen civil works @ \$335,500, on-farm irrigation systems materials/ installation @ \$229,591	\$530,091
Other		
TOTAL		\$766,071

Contributions

Although not specifically requested in the FY-98 Funding Proposal it is important to note several state and federal agencies as well as private individuals have made significant financial contributions to this task to date. They are: (Contributions include direct salaries, benefits, overhead, & travel or contract cost. All FY-98 costs are projected).

- a. BoR (FY-95) Appraisal Study of options including siphon, pumping,-- and conversion to sprinkler irrigation. \$ 24,000
- b. BoR (FY-97) canal survey----- \$ 7,000
IDF&G (FY-98)(contracted) additional canal survey----- \$ 10,000
- c. BoR (FY-97) (contracted) cultural & historical survey----- \$ 7,000
BoR (FY-98) (contracted) On-site inspection during construction---- \$ 3,000
- d. BoR (FY-96/97) Planning & Project Coordination----- \$ 45,500
BoR (FY-98) Planning & Project Coordination----- \$ 12,000
- e. NRCS (FY-97) Engineering Appraisal Study of S-26 options----- \$ 2,000
NRCS (FY-98) Engineering Assistance of Design Review prior to---- \$ 1,750
construction.
- f. NRCS (FY-97) Technical Assistance on pre-design options & cost----- \$ 4,500
estimates.
NRCS (FY-98) Technical Assistance for on-farm construction.----- \$ 2,200
- g. BoR (FY-98) Design of diversion berm, headgate, trashrack, canal---- \$ 35,000
enlargement, & bifurcation structure.
- h. On-farm sprinkler system designs (private landowner provided)----- \$ 1,800

I. Pivot sprinkler, pump, and power to be provided by Joe Chester----- (landowner-FY-98).	\$ 35,000
j. Vegetation removal, canal filling & fence rebuilding to be provided by- Ray Laverty (landowner-FY-98).	\$ 20,000
Sub-total of Contributions-----	\$210,750

Outyear costs

Outyear costs	FY1999	FY2000	FY2001	FY2002
Total budget	\$1,500,000	\$250,000	\$250,000	\$250,000
O&M as % of total				

Section 6. Abstract

Complete S-29, S-28, S-26 and Chester pump irrigation diversion consolidations started with FY-97 funds. Construction of a NMFS criteria fish screen on the S-28 canal after consolidation work is complete.

The goal of this task is to reduce the number of irrigation diversions on the Salmon River. Eliminating diversions reduces opportunities for juvenile entrainment and migration delay, eliminates the need for irrigators to enter the river with heavy equipment up to twice a year to construct push-up gravel diversion berms, and converting some irrigators from flood to sprinkler irrigation enhances instream flows. The elimination of the S-29 diversion will result in about 10,800 acre feet less water diverted annually that will remain in the Salmon River.

Section 7. Project description

a. Technical and/or scientific background.

Hundreds of irrigation diversions that provide surface water for irrigating pasture land and hay crops occur throughout the Salmon River basin. A 1992 Idaho Fish and Game survey identified 278 gravity irrigation diversions that are located in critical migratory habitat areas that are occupied by Snake River sockeye, spring/summer chinook salmon, steelhead and bulltrout.

The S-29 canal (Laverty) is considered by Idaho Fish & Game biologists to be the diversion that has the highest rate of juvenile smolt entrainment on the entire Salmon River system. The canal heading is on an outside bend in the river and during low flow conditions in spring and fall, which coincides with peak smolt out migration, Laverty & Cutler often construct a gravel berm across the entire Salmon River thereby funneling a

high percentage of all fish into their diversion. IDF&G screen maintenance personnel report seeing thousands of salmon and steelhead smolts in this single canal during spring out migration periods. This type of observation has not been reported at any other single diversion in the entire Salmon basin.

The “push-up” inriver gravel berms cause upstream and downstream passage problems for salmon and steelhead and extraordinary maintenance problems for the water users. Presently, the migration of anadromous fish is severely impacted by the current irrigation systems configuration. The physical barriers of the diversion berms and reduced instream water flows as a result of the berms impact the migration of adult fish in their upstream migration. Juvenile fish migration is affected due to the need to pass through three separate screening facilities on the S-26, S-28, & S-29 canals. The screen intake on the existing Chester pump does not meet NMFS criteria.

The irrigation diversions are located on the Salmon River in east central Idaho near the town of Challis, in Custer County. This task affects the following canal systems and pump: Lavery&Chester/S-29 at River Mile (RM 331); Gini/S-28 (RM 330); Hammond/Leaton/S-26 (RM 329) and Chester pump (RM 328). All lands along these three canals and pump station are in private ownership.

Description of Proposed Project

This task will improve both up and downstream passage conditions by consolidating four diversions (3 gravity - 1 pump) into one, and eliminating three (3) fish screens. Completion of this task will also eliminate annual streambed disturbances caused by rock wing dam reconstruction upon closure of two gravity diversions and one pump diversion.

The upper diversion (Lavery/S-29) will be eliminated. The Lavery & Cutler Ranches method of irrigation will be converted from flood to sprinkler irrigation. A pump will be installed in the Gini canal (S-28) to provide water for the Lavery and Cutler sprinkler systems. The Lavery Ranch currently has sufficient water rights in the Gini canal to support the installation of a sprinkler system. The proposal consists of consolidating the S-26 and Chester pump diversions into the Gini canal. The maximum diversion capacities are currently about 30 cubic feet per second (cfs) for the Lavery canal, 177 cfs for the Gini canal, 25 cfs for the Hammond/Leaton canal, and 1.5 cfs for the Chester pump station. All diversions are located on the left bank of the Salmon River. The combined flows, with the exception of the Lavery canal which will be eliminated, would be diverted into the existing Gini canal structure which would be modified to convey the additional water required. Water right priority dates would remain the same, however, a permit will have to be obtained from the Idaho Department of Water Resources in order to change the old point of diversion to the Gini canal. The rock wing dams for the Lavery, Hammond/Leaton canals and Chester pump would no longer be required and will be removed from the river. The abandoned canals (Lavery & Hammond/Leaton) will also be filled with material near the old point of diversion. The existing Chester pump will be

removed from the Salmon River.

The Gini Canal rock diversion dam is unstable and the existing headgates are in poor condition and do not have the capacity, without modification, for handling increased flows. The Gini canal presently does not have enough capacity to accommodate the consolidated flows of the Hammond/Leaton canal and Chester pump. In order to implement this task, the present Gini canal would require improvements to increase its present flow capacity of 177 cfs to approximately 203.5 cfs (see Table 1). This would be achieved by minimal lowering of the invert elevation in a few places and widening by approximately 2 feet in the upper 2 ½ miles of the canal. The existing fish screen (located approximately .5 miles downstream from the headgate) on the Gini canal will continue to be operated during the 1998 irrigation season. The existing screen will be replaced with a new structure after the 1998 irrigation season and will be operational for the 1999 irrigation season. Fish screens on the Lavery canal and Hammond/Leaton canal will be removed after the project is complete. The unscreened Chester pump in the Salmon River will also be removed.

Table 1. Salmon River/Gini Ditch Consolidation

<u>Diversion</u>	<u>Existing Delivery</u>	<u>Post Project</u>	<u>Water Savings</u>
Gini (S-28)	177 cfs	203.5 cfs	
*Lavery (S-29)	30 cfs	0 cfs	10,800 ac/ft annually
Hammond/Leaton (S-26)	25 cfs	0 cfs	
Chester Pump	1.5 cfs	0 cfs	
Total	233.5 cfs	203.5 cfs	30 cfs*

* Implementation of this proposed consolidation will result in improved irrigation efficiency (Lavery & Cutler convert from flood to sprinkler) with an immediate water savings of up to 10,800 ac/ft annually.

b. Proposal objectives.

The primary objective of this task is to implement actions that can improve Salmon River passage of salmon and steelhead (both adults and juveniles) plus resident fish near the town of Challis. In addition, this project will improve irrigation efficiency and conserve water for enhanced instream flow by decreasing irrigation water demand from the Salmon River. This will be done by converting the Lavery & Cutler Ranches irrigation practices from flood to sprinklers and consolidating the Hammond/Leaton canal and Chester pump into the Gini canal. All four diversions in the task area are rock wing dam structures that are generally reconstructed each spring (following runoff). Reconstruction of the rock wings is also sometimes needed during the summer following washouts caused by heavy thunderstorms. Heavy equipment (bulldozers & excavators) are used in the river to rearrange granular material and rocks to reform the rock wings to raise the water level high enough so that the water flows through the various canal headgates. Flow control at the headgates is limited; therefore, flow through the headgates into the canals increases or decreases with fluctuations in river flow.

Completion of this task started in FY-97 will result in several important benefits for ESA listed fish species. Instream flows will increase due to improved Irrigation efficiency, migration of sockeye, chinook, and steelhead will be positively affected due to a reduction of fish passage obstacles in the Salmon River, and the new fish screen will provide safe juvenile passage conditions.

c. Rationale and significance to Regional Programs.

Objectives of this Task; 1) Reduced juvenile entrainment opportunities, 2) Reduced juvenile migration delay and mortalities, 3) Improved adult passage conditions and

survival, 4) Improved instream flows for salmon & steelhead, 5) Implemented water conservation measures, and 6) Programs identified in the Model Watershed approach are all consistent with the Councils 1994 F&WP Measures 7.10, 7.8G, 7.8H, and 7.7 respectively.

Without the additional FY-98 funding requested to complete the S-28 consolidation (FY-97/Task II) the primary objective of eliminating the S-29 Lavery canal will not be realized. Also, screening of the S-28 canal, after the consolidation, is critical for juvenile fish protection. When this Task is complete the S-28 canal will be the single largest irrigation canal on the entire Salmon River. In addition, the Idaho Department of Fish & Game has identified the S-29 (Lavery) canal as the single worst diversion on the entire Salmon River for entraining migrating salmon. During the spring migration period thousands and thousands of smolts (sockeye, chinook, & steelhead) have been observed in this one canal alone!

d. Project history

Task I of this project (9600700) in FY-96 was on the Salmon River near Challis, Idaho and was the consolidation of the Upper McGowan, Lower McGowan, and Keyes canals with the Challis canal and conversion of several flood irrigators to sprinkler irrigation. The canal furthest upstream, the Challis, was enlarged from a capacity of 120 cfs to 165 cfs. The Upper McGowan, Lower McGowan, and Keys canals were then plugged and abandoned. Water users in the lower three canals transferred their legal point of diversions with the Idaho Department of Water Resources to the Challis canal. With the conversion of several ranches to more efficient sprinkler irrigation the amount of water now diverted from the Salmon River was reduced by about 8,000 acre feet annually that remains in the Salmon River enhancing instream flows for ESA listed and resident fish species. The construction phase of Task I was started in February 1996 and completed in June 1996.

Task II of the project (FY-97) was to be the consolidation of the Lavery, Hammond/Leaton, and Chester pump with the Gini canal along with conversion of Lavery & Cutler ranches to sprinkler systems. Several unforeseen circumstances caused a delay in the construction schedule. First, the inability to attain consensus of all parties on the project as planned. Second, the unknown requirement by BPA of the necessity to pay Davis/Bacon wages on all elements of the project which meant the original funding requested was inadequate to complete the task.

Task III (FY-98) is a request for the additional funding to complete the consolidation work described in Task II above plus the construction of a fish screen to NMFS criteria on the Gini canal after the consolidation work is complete.

e. Methods.

Construction

Construction will consist of the following activities:

1. Installation of two (2) sprinkler system pivots, several wheel lines and hand lines on the Laverty Ranch and one (1) wheel line on the Cutler Ranch. A pump station will be constructed in the Gini canal to provide irrigation water for the two ranches. The old S-29 canal will be abandoned and filled in.
2. Construction of a new headgate and trash rack to replace the existing old headgate on the Gini canal. The existing headgate was constructed in 1949 and is in very poor condition. One of the gates failed during high water in 1995 and the other gate failed during high water in 1996. The new structure will be sized to take the additional 26.5 cfs required for the consolidation of the Hammond/Leaton canal and the Chester pump into the Gini canal. The headgate/ trash rack and in-river diversion berm will be designed by the Bureau of Reclamation.
3. The existing unstable rock diversion berm will be reinforced with larger material and stabilized to eliminate the annual requirement for the irrigators to put heavy equipment in the Salmon River to rebuild the berm.
4. Construction of a new fish screen and wasteway near the existing screen site. Presently a wasteway is located behind the fish screen. A new wasteway will be designed and constructed upstream of the new fish screen. The fish screen will meet NMFS criteria and will be designed by the Idaho Department of Fish & Game. Construction of the new fish screen and wasteway will occur after the 1998 irrigation season and before the 1999 season.
5. Construction of a bifurcation structure on the Gini canal will drop water back into the Hammond/Leaton canal approximately 2 ½ miles downstream from the river diversion. At this location the two canals are only about 400 feet apart. The structure will be located just south of the highway 75 & 93 junction on the Laverty Ranch. The bifurcation structure will be designed by the Bureau of Reclamation.
6. Enlargement of the first 2 ½ miles of the Gini canal (widen approximately 2 feet). This enlargement will carry the water for the Hammond/Leaton canal prior to being dropped back into the existing canal. The heading for the Hammond/Leaton canal will be abandoned and filled.
7. Install a buried pipeline from the Gini canal to handle the additional 1.5 cfs required for the Chester pump. When the new highway 93 bridge was built across the Salmon River in 1995 the highway department placed a culvert under the new section of highway to accommodate this element of the project.

Prior to construction the Custer Soil & Water Conservation District (CS&WCD) will enter into agreements with the Gini Canal Company and landowners Laverty, Cutler, and Chester. The Gini Canal Company and landowners will contract for the work to be completed. The Bureau of Reclamation will provide structure designs for the in-river diversion berm, headgate/trash and bifurcation structure. The NRCS will provide on-farm technical assistance for the sprinkler systems. The Idaho Department of Fish and Game will design the new fish screen and provide construction supervision and inspection when the new fish screen is constructed starting in October 1998. The IDFG will continue to be responsible for operation and maintenance of this screen. Construction activities for the

canal widening, in-river berm stabilization, headgate/trashrack and bifurcation will start in late February 1998 be completed in June 1998. Fish screen construction will start in late October 1998 after the irrigation season ends. The Gini canal will be dry during portions of construction activities (to accommodate the irrigation season). This technique will eliminate any construction-generated sediment except for in-river work necessary to stabilize the river diversion berm.

Construction is limited to the non-irrigation season (November through April), severe winter weather conditions (typically December-February), and low water conditions for in-river work.

In-river Berm Stabilization - Traditionally the S-28 diversion berm is constructed twice annually (low water before spring run-off and again in August) by hauling in rock or utilizing existing rock that has washed downstream from the old berm. Heavy equipment such as crawlers, excavators, and or front end loaders are used to construct the rock berm. To make the diversion more permanent and eliminate the twice annual need to construct the rock berm a trench will be excavated 200-300 feet from the headgate upstream in the same alignment as the existing berm. Either metal sheet pile or pre-cast concrete blocks will be placed in the trench and covered with large rock for stability.

Headgate/trashrack/spillway - A small cofferdam will be constructed to isolate the work area. The cofferdam will be constructed around the existing old headgate/spillway structure so construction of the new structure will be in the dry. Construction of the headgate/trashrack/spillway is scheduled to start in February 1998.

Canal Widening - Canal widening of the Gini ditch will start behind the existing headgate and go approximately 2 ½ miles to the junction of highways 75 & 93. This work will start in February 1998. None of this work will be in or near the Salmon River.

Bifurcation Structure - This structure will be constructed on the Laverty Ranch at the point where the Gini ditch goes under highway 75. This work will start in February 1998 and be completed by late April.

Environmental Evaluation

Hydrology

The climate of the Salmon River Valley near Challis can easily be described as cold desert.

Annual rainfall varies greatly throughout Custer County with mountaintops receiving about 40 inches of precipitation annually and valley areas receiving less than 10 inches. Average annual precipitation at Challis is 7 inches.

The Salmon River, upstream of the project area, drains about 2,800 square miles. The long-term flow measurement point on the Salmon River, nearest the project, is about 73 miles downstream at RM 259 near the town of Salmon which measures flows from a drainage area of about 3,760 square miles. Mean annual discharge at Salmon is about

642,000 acre-feet. Flows normally peak in June and then decrease through summer until September. Average monthly flows at Salmon range from a high of 11,790 cfs in June to a low of 445 cfs in August.

Water Quality

Existing Salmon River water quality is temporarily degraded near the four diversion sites each spring (and sometimes during summer) when heavy construction equipment enters the river bed and is used to reconstruct the in-river rock wing dams. Disturbance of the streambed during berm reconstruction releases sediment which flows downstream. Some of the released sediment may settle into gravels downstream or continue to be moved by the water column. There is also danger of petroleum spills and the occurrence of other toxic substances resulting from use of power equipment during rock wing dam reconstruction.

Temporary minor releases of sediment may occur as a result of heavy equipment needed to place large boulders to stabilize the existing Gini diversion dam. However, single short term releases would be no worse than those that occur presently during annual reconstruction of the rock wing diversion dams. The long-term effect of the project on Salmon River water quality would be positive.

Several measures will be undertaken during construction to assure that no significant decreases in water quality occur. Staging areas will be located away from the Salmon River to ensure that any chemical spills or leaks would not reach the water. Reclamation and the Natural Resource Conservation Service will assure that the appropriate federal, state, and local permits are obtained before construction. Any conditions included in these permits will be made a part of contract specifications. The Gini Canal Company will apply to the Army Corps of Engineers and State Department of Lands and Department of Water Resources for a Section 404 and State Stream Alteration Permit (if needed). Any mitigation measures required to protect water quality under these permits would be adhered to.

Fish and Wildlife

Important fish species using the Salmon River in the project area include the anadromous spring/summer chinook salmon, sockeye salmon, and steelhead. While sockeye and spring chinook salmon do not spawn in or near the proposed project site, this area acts as a migration corridor for juveniles and adults. Resident fish species such as rainbow, cutthroat, bull trout and mountain whitefish also occur in the area. Many of the native resident species face the same passage problems as salmon and steelhead during their up and downstream movements.

This task will improve both up and downstream passage conditions by consolidating four diversions (3 gravity - 1 pump) into one. Completion of this task will also eliminate annual streambed disturbances caused by rock wing dam reconstruction upon closure of

two gravity diversions and one pump diversion. During periods of low river flow, these gravel berms may be constructed entirely across the river which tends to funnel nearly all migrating juvenile salmonids into diversions. Adult fish passage is also impaired under similar situations. These improvements will have a positive effect on all fish species that move through the reach at some point in their life cycle. Benefiting species would include spring/summer chinook salmon, sockeye salmon, steelhead and all of the native resident species occurring in the Salmon River.

Endangered Species

Three species of fish currently listed under the Endangered Species Act occur in the project area: sockeye salmon (endangered), spring/summer chinook salmon (threatened), and steelhead (threatened). Bull trout are being considered for listing.

Migration of adult sockeye salmon in the Salmon River to Redfish Lake begins as early as July and continues through October. Arrival at Redfish Lake (50 miles upstream from the task site) peaks in August. Migrant juvenile sockeye salmon leave Redfish Lake from late April through May. Downstream migration of chinook, sockeye, and steelhead smolts coincides with the start of the irrigation season. Instream flows are low at this time as runoff of the mountain snow pack is normally in mid to late June. Because instream flows are low, irrigators must construct the push-up gravel berms which results in a high percentage of smolts becoming entrained in the canals and delayed on their migration.

Migration of adult spring/summer chinook salmon in the Salmon River (near Challis) begins in early June and continues throughout the summer until about the end of September. Peaks in upstream movement usually occur in mid-July. Downstream movement of spring chinook juveniles occurs throughout most of the year. The out migration of pre-smolts occurs from January to June with the peak out migration in April and May and mid-September through mid-November.

Completion of this task will benefit sockeye, spring/summer chinook salmon, and steelhead. The elimination of three diversions on the Salmon River will improve passage conditions for both upstream and downstream migrating fish. Several additional measures are included in the task to ensure that there will be no adverse impacts to salmon. These measures include:

1. In-water work will be limited to stabilizing the rock diversion berm and first 50' of the outside canal bank on the Gini canal.
2. The construction schedule will be coordinated with the Idaho Department of Fish & Game (IDFG), National Marine Fisheries Service (NMFS), and the Fish and Wildlife Service (FWS).

The Salmon River has been designated by NMFS as critical habitat for sockeye and spring chinook salmon. This task will not disturb the river in the project area. The project will

provide a beneficial long-term effect on critical habitat by improving fish passage conditions on the Salmon River near Challis, Idaho.

f. Facilities and equipment.

Not applicable. Work identified in this Task will be contracted by the landowners. All contractors will be responsible for necessary equipment to complete the Task. The SWCD will enter into contracts with the landowners.

g. References.

Bevan, D., J. Harville, P. Bergman, T. Bjornn, J. Crutchfield, P. Klingeman, J. Litchfield. 1994. Snake River Salmon Recovery Team: Final Recommendations to National Marine Fisheries Service. Dated May 1994.

Section 8. Relationships to other projects

This Task complements the ongoing fish screen program of the Idaho Department of Fish & Game. The IDF&G has completed a number of irrigation consolidations to improve juvenile passage conditions and reduce the total number of irrigations on the Salmon River and tributaries.

Similar to Task I (Challis canal consolidation) in FY-96, the present Task required coordination with other agencies and entities including: Idaho Department of Fish & Game, National Marine Fisheries Service, Sho-Ban Tribe, U.S. Fish & Wildlife Service, Natural Resources Conservation Service, Bureau of Reclamation, Corps of Engineers, Idaho Department of Water Resources, and numerous private canal operators and individual irrigators and ranchers.

Section 9. Key personnel

Custer County Soil & Water Conservation District (S&WCD):

Lida Robinson, Chair - Mrs. Robinson is the chair of the S&WCD and is experienced in working with BPA Grants through the Lemhi-Pahsimeroi-East Fork Model Watershed Program and was overall responsible for the FY-96 Challis consolidation Task I.

Rick Philips, Secretary/Treasurer & Contracting Officer - Mr. Philips has experience working with BPA Grants through the Lemhi-Pahsimeroi-East Fork Model Watershed Program and was the contracting officer for the S&WCD for the FY-96 Challis consolidation Task I.

Karma Bragg, Administrative Assistant - Mrs. Bragg has experience in BPA Grant processing and administration in working with the Lemhi-Pahsimeroi-East Fork Model Watershed Program and with the Challis consolidation Task in FY-96.

Other S&WCD Board Members - Mr. Ted O'Neal; Vice-Chair, Mr. Jim Dowton, and Mr. Wayne Baker. These are all local landowners and have experience with BPA

Grants through the Lemhi-Pahsimeroi-East Fork Model Watershed Program and in working with the BPA Grant for the Challis consolidation Task in FY-96.

Mark Olson, Soil Conservationist - Mr. Olson is employed by the Natural Resources Conservation Service in Challis, Idaho and provides technical expertise for Task completion. Mr. Olson has worked for the NRCS since 1985 and has a degree in agronomy from the Utah State University in 1988. Mark also has experience with BPA Model Watershed Grants and worked on the Challis consolidation Task I.

Chuck Keller, Fishery Program Manager - Mr. Keller is employed by the Bureau of Reclamation in Salmon, Idaho and provides assistance to the CS&WCD in budget proposals and program coordination. He served as the Idaho Fish Screen Program Coordinator from 1992-1995 under an Interagency Personnel Agreement from Reclamation to the Idaho Department of Fish & Game. Mr. Keller has worked for the federal government since 1972 and has a BS degree in fisheries biology from the University of California; Humboldt in 1970. He also worked on the Challis consolidation Task I.

Mr. Phil Mann, Engineer - Mr. Mann is employed by the Bureau of Reclamation in Boise, Idaho and will provide all engineering and specifications necessary for the canal consolidation including designs for the canal enlargement, headgate, trashrack, inriver diversion berm, and bifurcation structure needs.

Mr. Matt Hightree, Engineer - Mr. Hightree is employed by the Idaho Department of Fish & Game in Salmon, Idaho and will provide all engineering and specifications necessary of the construction of the S-28 fish screen.

Note: The Custer Soil & Water Conservation District will receive 5% of the BPA Grant for administrative costs. Other individuals shown are salaried by their respective employing agency and will not require any compensation to complete this Task.

Section 10. Information/technology transfer

The completion of Task I (Challis consolidation) has been identified by the Northwest Power Planning Council as a successful project where irrigators and fisheries interests all benefitted. A story on the Challis consolidation success will soon appear as a feature article by the Council.

The completion of Tasks II & III will further enhance the trust level and cooperation between tribal, federal, state entities working with private landowners on other Council Fish and Wildlife Projects throughout the northwest.